

ABSTRACT

An acoustooptic filter can provide a broad light transmission characteristic at low electrical power without reducing the length of a mutual action area.

In an acoustooptic filter 1, an optical waveguide 3 is disposed in an upper surface 2a of an acoustooptic substrate 2, an interdigital electrode 4 which excites a surface wave is disposed on the acoustooptic substrate 2, a surface wave waveguide for the surface wave excited by the interdigital electrode 4 extends in substantially the same direction as the optical waveguide, and a mode of the light guided to the optical waveguide 3 is converted by the surface wave. The acoustooptic filter 1 includes a thin-film ridge 5 as phase match condition changing means for changing a phase match condition at a mutual action area by 0.235% or more from a state in which phases are matched, the mutual action area being an area where the surface acoustic wave and the light guided to the optical waveguide 3 act upon each other.